

REMARKS

Claims 1-3, 5-22 were pending in this application. The original application did not include a Claim 4. New Claim 4 has been added. Claims 1-22 will remain in this application after this amendment.

The Office Action objected to Fig. 1 because reference number "30" was used twice. Applicant has amended Fig. 1 and the specification to change the reference number "30" for the "Next Read Address Register" to "28."

The Office Action objected to the specification because of informalities. Applicant has amended the specification to correct the informalities.

The Office Action objected to the specification for failing to support subject matter in Claims 10 and 18. Applicant has amended Claim 10 to clarify the recited system. No new matter has been added. Amended Claim 10 is supported by Fig. 2 and page 5, lines 3-14 of the specification. Applicant has amended Claim 18 to clarify the recited computer program product, which is also supported by Fig. 2 and page 5, lines 3-14 of the specification.

The Office Action objected to Claims 5, 7, 13, 14 and 17 because of informalities. Applicant has amended Claims 5 and 7 to be in proper dependent form. Applicant has amended Claims 13, 14 and 17 to correct the informalities.

The Office Action rejected Claims 10, 11, 13, 14 and 18 under 35 USC 112 as being indefinite. The Office Action stated Claim 10 is "ambiguous because it recites both an apparatus and method steps" and "the class is indeterminate." Claim 10 is an apparatus claim, which depends from apparatus Claims 8 and 9. Claim 10 has been amended to clarify the claimed system. Claim

10 recites functions of the "bridge." Reciting functions of an apparatus is an accepted practice for apparatus claims. The Office Action also rejected Claim 10 for using the word "also." Applicant has removed the word "also" and amended Claim 10 to clarify the claimed system.

Applicant has amended Claims 11, 13 and 14 as suggested by the Office Action to overcome the 35 USC 112 rejection.

The Office Action rejected Claim 18 for using the word "also." Applicant has removed the word "also" and amended Claim 18 to clarify the claimed computer program product.

The Office Action rejected Claim 10 under 35 USC 101 for claiming non-statutory subject matter. Claim 10 is an apparatus claim, which depends from apparatus Claims 8 and 9. Claim 10 has been amended to clarify the claimed system. Claim 10 recites functions of the "bridge." Reciting functions of an apparatus is an accepted practice for apparatus claims.

The Office Action rejected Claims 1, 6, 8, 9, 11 and 13-16 under 35 USC 102 as being anticipated by Schumann (6,012,106).

Claim 1 has been amended to clarify the recited method, which now includes "terminating the retrieving; determining if the requesting agent received as much data as requested when the retrieving is terminated; and based upon the determining if the requesting agent did not receive as much data as requested, storing a next read address at which data would have been retrieved had the retrieving not been terminated."

The Office Action stated col. 4, lines 47-49 of Schumann discloses "storing a next read address," as recited in Claim 1. Col. 4, lines 47-49 of Schumann state "[t]he table 21 may be stored as part of a larger scatter gather map 29 that also maps PCI bus memory addresses PM to host memory addresses. In the illustrated embodiment, the scatter-gather map 29 is typically

implemented as a content-addressable memory." These lines do not disclose "storing a next read address," as recited in Claim 1. Fig. 2 and col. 4 of Schumann disclose a "page memory table 21" with "host memory page" numbers, e.g., HM_1, HM_2, and "PCI memory page numbers," e.g., PM_1, PM_2. Thus, Schumann does not disclose or teach "storing a next read address at which data would have been retrieved had the retrieving not been terminated," as recited in amended Claim 1.

For this reason, amended Claim 1 and dependent Claims 2-7 should be allowable over Schumann.

Claim 4 has been added and is supported by Fig. 2 and pages 5-6 of the specification. No new matter has been added.

Claim 8 has been amended to clarify the recited system, which as amended, recites a "bridge" configured to "(c) determine if the requesting agent has received the full amount of requested data when the read is terminated; and (d) based upon the determination if the requesting agent did not receive the full amount of requested data, increment a value in the re-read pre-fetch factor register."

The Office Action cites Fig. 2, item 27 of Schumann as disclosing the "re-read pre-fetch factor register" of Claim 8. Schumann discloses a "DMA read register 27" in Fig. 2 and col. 4, lines 4-5. Schumann does not explain functions of the "DMA read register 27" or what the "register 27" stores, e.g., data, address or something else. Thus, the "DMA read register 27" in Schumann does not disclose or teach the "re-read pre-fetch factor register" of Claim 8, which stores a "re-read pre-fetch factor."

The Office Action cites Fig. 2, item 29 of Schumann as disclosing the "next read address register" of Claim 8. Item 29 in Schumann refers to a "scatter gather map 29 that also maps

PCI bus memory addresses PM to host memory addresses." As described above, the "scatter gather map 29" in Schumann does not disclose or teach a "next read address register," as recited in Claim 8.

The Office Action cites col. 5, lines 11-13 of Schumann as disclosing a "bridge" being configured to "increment the re-read pre-fetch factor register," as recited in Claim 8. As stated above, Schumann does not disclose the "re-read pre-fetch factor register" of Claim 8. Moreover, col. 5, lines 11-13 of Schumann cited by the Office Action disclose incrementing a "cache counter." These lines do not disclose incrementing the "re-read pre-fetch factor register" of Claim 8. Col. 5, lines 8-10 of Schumann state the "cache line counter is used to keep track of the number of cache lines actually transferred during the DMA read transaction." There is no indication that the "cache counter" in Schumann stores a "re-read pre-fetch factor." Thus, the "cache counter" in Schumann does not disclose or teach the "re-read pre-fetch factor register" in Claim 8.

For the reasons above, amended Claim 8 and dependent Claims 9-16 should be allowable over Schumann.

For Claim 9, the Office Action cited col. 4, lines 49-54 as disclosing a bridge configured to store a next read address. Col. 4, lines 49-54 describe a "scatter gather map 29," which does not disclose storing a "next read address," as described above.

Claims 2 and 3 were rejected under 35 USC 103(a) over Schumann in view of Young (5,768,548). The Office Action cited col. 11, lines 27-30 of Young, which state "[t]he address buffer 240, in an alternative embodiment, stores the first address in a block of data, and thereafter, uses a comparator 250 to determine whether the next access is addressed to the next

sequential address." These lines do not disclose a "stored next read address," as recited in Claim 2. In addition, Schumann and Young do not disclose the second part of Claim 2, which states if the "read address" and the "stored next read address" match, "retrieving an amount of data determined by both the pre-fetch factor and a re-read pre-fetch factor." For these reasons, Claim 2 should be allowable over Schumann and Young.

Claim 3 has been amended to depend on Claim 1 and should be allowable for the reasons stated above.

Claim 12 was rejected under 35 USC 103(a) over Schumann and Witt (6,167,506). The Office Action cited col. 18, lines 51-60 of Witt as disclosing a bridge being configured to "decrement the pre-fetch factor register after an interval." This contention is respectfully traversed. First, the cited lines in Witt disclose "two push operations (which decrement the ESP register by a constant value)." The "ESP register" in Witt does not teach the "pre-fetch factor register" in Claim 12. There is no indication that the "ESP register" in Witt stores a "pre-fetch factor" as in Claim 12. Second, Witt does not teach decrementing a "pre-fetch factor register after a time interval," as recited in amended Claim 12. For these reasons, Claim 13 should be allowable over Schumann and Witt.

Claims 17, 21 and 22 were rejected under 35 USC 103(a) over Schumann in view of Arimilli (6,496,921). Claim 17 has been amended to clarify the recited computer program product.

Schumann does not teach amended Claim 17 for similar reasons to those stated above for amended Claim 1. Schumann does not teach a "computer program product" with instructions to "determine if the requesting agent has received the full amount of requested data when the reading terminates; and if the requesting agent did not receive the full amount of requested

data, store a next read address at which data would have been retrieved had the retrieving not been terminated," as recited in amended Claim 17.

Arimilli only discloses a "CD-ROM 178." Arimilli does not teach a "computer program product" with instructions to "determine if the requesting agent has received the full amount of requested data when the reading terminates; and if the requesting agent did not receive the full amount of requested data, store a next read address at which data would have been retrieved had the retrieving not been terminated," as recited in amended Claim 17.

For these reasons, amended Claim 17 and dependent Claims 18-22 should be allowable over Schumann and Arimilli.

Claim 21 recites a "pre-fetch factor register," "re-read pre-fetch register" and "next read address" contained within a bridge. As stated above, Schumann does not teach "re-read pre-fetch register" and "next read address" contained within a bridge.

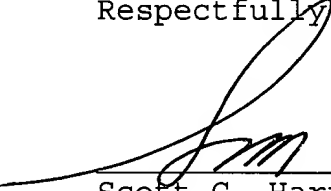
Claim 19 was rejected under 35 USC 103(a) over Schumann in view of Arimilli and Hicks (6,085,291). The Office Action cited col. 3, lines 7-10 of Hicks as disclosing "instructions causing the computer to increment the re-read pre-fetch factor register based upon the determining," as recited in Claim 19. The cited lines in Hicks state "incrementing the pre-fetch data to control the depth of prefetching." The cited lines in Hicks do not teach "instructions causing the computer to increment the re-read pre-fetch factor register based upon the determining," as recited in Claim 19. Hicks does not teach a "re-read pre-fetch factor register" or incrementing such a register as recited in Claim 19. Thus, Claim 19 should be allowable over Schumann, Arimilli and Hicks.

Claim 20 was rejected under 35 USC 103(a) over Schumann in view of Arimilli and Witt. As described above, Schumann, Arimilli and Witt do not teach decrementing "the pre-fetch factor register after a time interval," as recited in Claim 20.

Applicant respectfully requests that all pending claims be allowed. A \$172 check is enclosed for two extra independent claims. No fee is believed to be required for new Claim 4 since Claim 4 was not submitted before but a fee was paid for 22 total claims. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: January 13, 2004



Scott C. Harris
Reg. No. 32,030

Attorneys for Intel Corporation

Fish & Richardson P.C.
PTO Customer Number: 20985
12390 El Camino Real
San Diego, CA 92130
Telephone: (858) 678-5070
Facsimile: (858) 678-5099
10348310.doc

Appendix

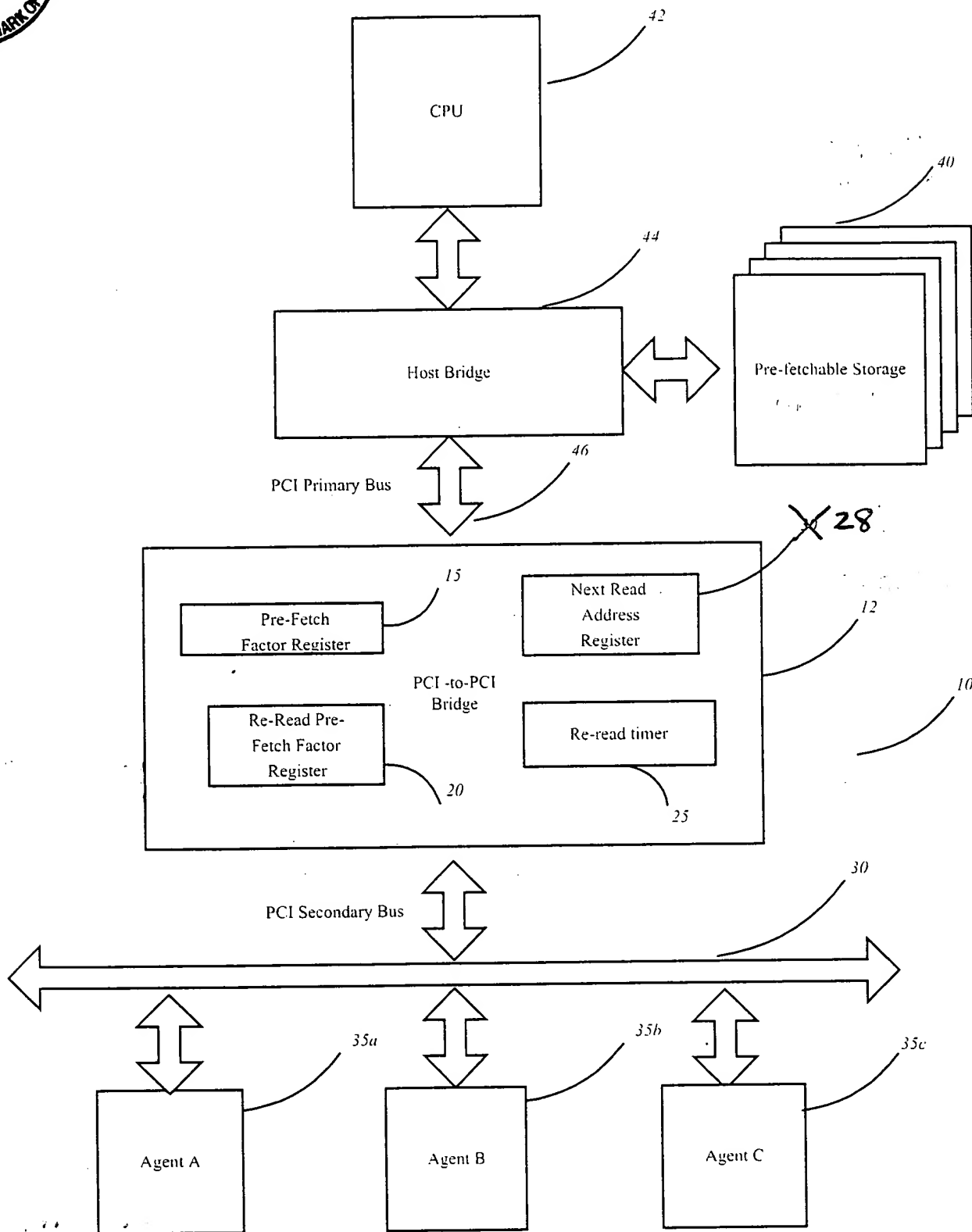


FIG 1

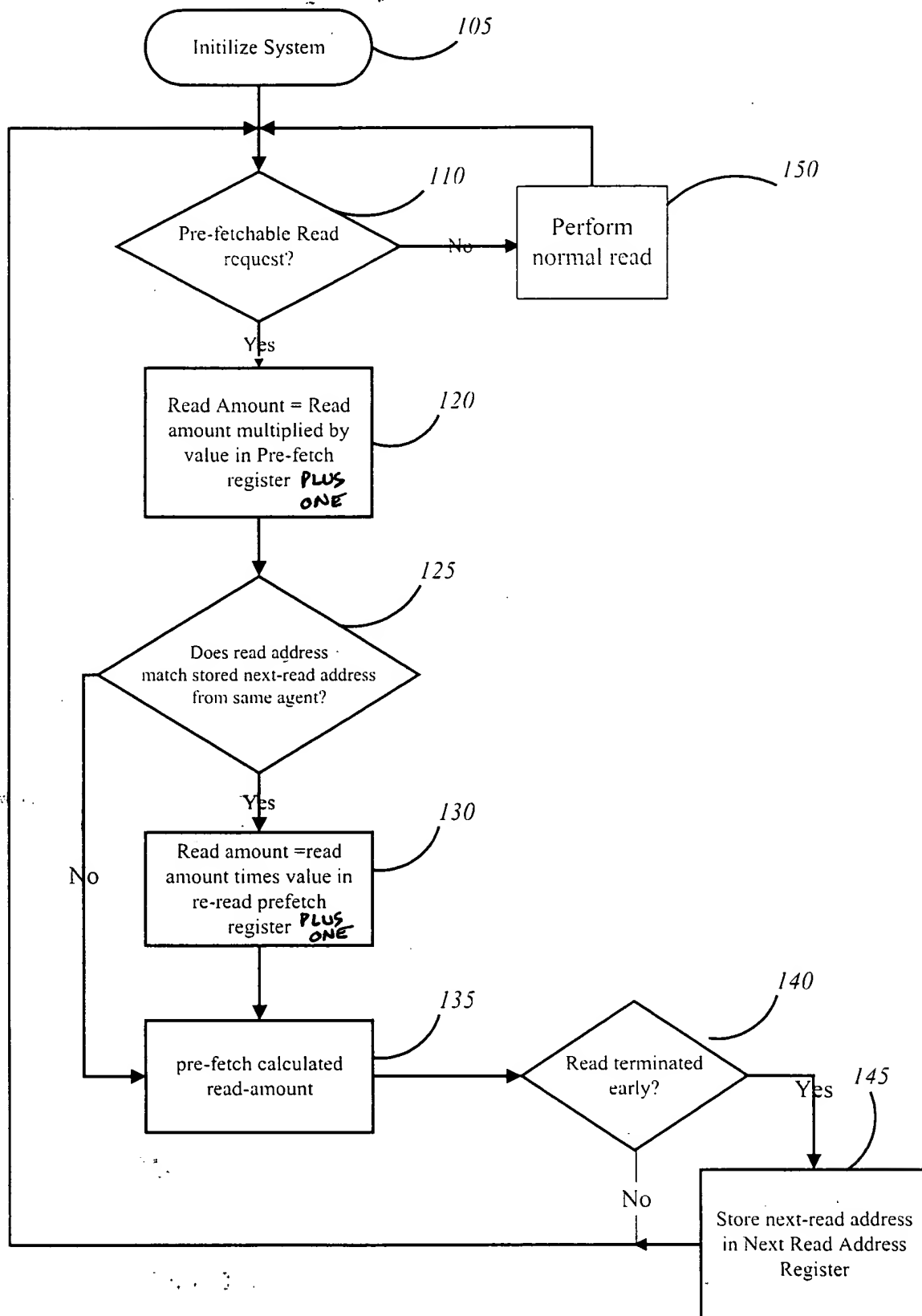


FIG. 2